CLAIMS

1. A method of searching for a character pattern within a data stream comprising:

computing a checksum for said character pattern;

computing another checksum for a predetermined portion of said data stream; and

comparing said another checksum to said checksum to determine if there is a match.

2. The method according to Claim 1 further comprising shifting said portion of said data stream into a shift register.

3. The method according to Claim 1 further comprising:

shifting more data from said data stream into said shift register if said comparison does not result in a match; and

recomputing said another checksum by removing an oldest unit of data from said another checksum recomputation and adding said more data to said recomputation.

4. The method according to Claim 3 further comprising:

continuing said shifting and said recomputing until said comparison results in a match.

5. The method according to Claim 1 further comprising:

shifting multiple portions of said data stream into said shift register.

6. The method according to Claim 5 further comprising computing a plurality of another checksums based upon different parts of said multiple portions of said data stream.

7. The method according to Claim 6 wherein said character pattern includes a plurality of character patterns and said checksum comprises a plurality of checksums;

said method further comprising simultaneously comparing said plurality of another checksums to at least two of said plurality of checksums to determine if there are any matches.

8. The method according to Claim 7 wherein at least two of said plurality of checksums have different lengths.

9. The method according to Claim 1 wherein said character pattern includes a plurality of character patterns and said checksum comprises a plurality of checksums;

said method further comprising simultaneously comparing said another checksum to at least two of said plurality of checksums to determine if there are any matches.

10. The method according to Claim 1 wherein said character pattern includes a plurality of character patterns and said checksum comprises a plurality of checksums;

said method further comprising comparing said another checksum to one of said plurality of checksums to determine if there is a match;

recomputing said another checksum based upon a longer portion of said data stream; and

comparing said recomputed another checksum to at least another of said plurality of checksums.

11. The method according to Claim 1 wherein said potion of said data stream include a byte of data.

12. The method according to Claim 1 wherein said potion of said data stream include a plurality of bytes of data.

13. Apparatus that searches for a character pattern within a data stream comprising:

a register;

a processor for copying a predetermined portion of said data stream into said register;

a checksum generator configured to compute a checksum for said character pattern and another checksum for said predetermined portion; and,

at least one comparator configured to compare said another checksum to said checksum.

14. The apparatus according to Claim 13 wherein said register further includes a plurality of registers.

15. The apparatus according to Claim 13 wherein said predetermined portion of said data stream is a byte of data.

16. The apparatus according to Claim 13 wherein said predetermined portion of said data stream is a plurality of bytes of data.

17. The apparatus according to Claim 13 wherein said checksum generator is configured to respectively compute a plurality of checksums for a plurality of character patterns and to compute another checksum for said predetermined portion; and,

wherein said at least one comparator includes a plurality of comparators each configured to respectively compare said another checksum to different ones of said pluraity of checksums.

18. The apparatus according to Claim 17 wherein at least two of said plurality of checksums have different lengths.

19. The apparatus according to Claim 17 wherein said checksum generator comprises a plurality of checksum generators.

20. The apparatus according to Claim 13 wherein said processor is configured to shift more data from said data stream into said register if said comparator does not detect a match; and,

said checksum generator is configured to recompute said another checksum by removing an oldest unit of data from said another checksum recomputation and adding said more data to said recomputation.

21. A method of searching for a character pattern within a data stream comprising:

computing a checksum for said character pattern; wherein said character pattern has a length;

shifting a byte of data from said data stream into a register;

computing another checksum for said byte of said data stream;

continuing said shifting and computing of another checksum until a length of said shifted bytes of data is equal to said length of said character pattern;

comparing said another checksum to said checksum to determine if a match exists;

shifting another byte of data from said data stream into said register if said comparison does not result in a match; and

recomputing said another checksum by removing an oldest byte of data from said another checksum recomputation and adding said another byte of data to said recomputation;

comparing said recomputed checksum to said checksum to determine if a match exist; and,

continuing said shifting another byte, said recomputing, and said comparing until a match exists.

22. Apparatus that searches for a character pattern within a data stream comprising:

register means for temporarily storing a portion of said data stream;

processor means, electrically coupled to said register means, for copying said portion of said data stream into said register means;

checksum generator means for computing a checksum for said character pattern and for computing another checksum for said portion of said data stream; and,

comparison means coupled to said checksum generator means for comparing said another checksum to said checksum to determine if a match exists.